

MULTI-PHASE MEASUREMENT SYSTEM WITH SYNCHRONIZED  
SIGMA DELTA CONVERTERS

ABSTRACT OF THE DISCLOSURE

A measurement system includes multiple analog sensor elements and multiple sigma-delta modulators for producing digital outputs. Each sigma-delta modulator receives charge packets from one or more sensor element and charge packets from a shared element (which may be a sensor or a reference element). The sigma-delta modulators are operated synchronously in separate phases, so that the shared element either delivers or does not deliver a charge packet of the sign desired by a sigma-delta modulator only during the phase associated with that sigma- delta modulator.